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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,965	06/27/2003	Gan Lin Hwang	Q76295	4841
23373	7590	06/27/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			STADLER, REBECCA M	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/606,965	Applicant(s) HWANG, GAN LIN	
	Examiner Rebecca M. Stadler	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-11,14-16,19-21 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-22, 14-16, 19-21 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1754

Response to Arguments

Applicant's arguments, see Remarks, filed 3/29/2006, with respect to the 112 first paragraph rejection and the 35 USC 103 rejection of claims 1-2, 4-5, 7-11, 13-16, 18-21, 23 and 24 in view of Ruoff '748 have been fully considered and are persuasive. The 112 rejection of claims 8 and 9 and the 103 rejection of claims 1-2, 4-5, 7-11, 13-16, 18-21, 23 and 24 in view of Ruoff '748 have been withdrawn.

Applicant's arguments filed 3/29/2006 have been fully considered but they are not persuasive.

Applicant argues that the claim requires a carbon nanocapsule and that Lieber '742 discloses a nanotube. However, both carbon nanotubes and nanocapsules are made of carbon, have a shell, a closed cap and are hollow. Further, USP 5,919,429 explains that arc-discharge produced high-order fullerenes are called carbon nanotubes or carbon nanocapsules. Finally, the process used in the patent and patent application incorporated into the present specification is the same arc-discharge process as used by the Lieber '742 reference, as explained below. Therefore, it is expected that the same product would be formed.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2, 5-11, 14-16, 19-21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lieber 6,159,742.

As to claim 1, Lieber '742 discloses a carbon nanotube (see column 1, lines 39-41) having an organic functionalization (see column 1, lines 48-67). The formula disclosed is: $X-(L-M)_n$, wherein L-M is deemed to meet the limitation of an organic functional group. Further, on page 2 of the specification, applicant incorporates "application No. _____ and _____)." It appears that patent application 10/255669, and USP 6,872,236 were meant. The above application and patent disclose an arc discharge method for producing nanocapsules, which is a standard method for producing carbon nanotubes. As such, despite applicant's limitation of a nanocapsule, no difference is seen between the nanocapsule of the present invention and the nanotube of Lieber. Finally, the nanotubes are hollow (see column 2, line 24).

As to claims 2 and 5, Lieber '742 discloses a multi-walled carbon nanotube (see column 2, lines 33-39) with a diameter of 1-200 nm (see column 2, lines 24-26). In the carbon nanotube formula, n is 1 to 100 (see column 1, line 55).

Lieber is deemed to meet claim 6 because of the various possible combinations (see column 4, lines 25-40). Insofar as the formula for Lieber does not match up to the present formula, it would have been obvious to provide bigger linking groups to be able to sorb more complicated molecules having many binding sites.

As to claims 7-9, these are product by process limitations. It appears that the instantly claimed product by process is the same as that which is claimed. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. See, e.g., In re Brown, 459 F.2d 531, 173 U.S.P.Q. 685 (CCPA 1972); In re Fessman, 489 F.2d 742, 180 U.S.P.Q. 324 (CCPA 1974).

As to claim 10, 11, and 14, Lieber teaches the functional groups of hydroxy (see column 4, lines 8-9), carboxylic acid (see column 4, lines 27-29), aldehydes and ketones (see column 4, lines 34-36). As explained above, Lieber '742 discloses a multi-walled carbon nanotube (see column 2, lines 33-39) with a diameter of 1-200 nm (see column 2, lines 24-26). In the carbon nanotube formula, n is 1 to 100 (see column 1, line 55).

As to claim 15, 16, and 19, Lieber teaches the functional groups of amides (see column 4, lines 31-34, see also column 4, lines 1-3). Lieber '742 discloses a multi-walled carbon nanotube (see column 2, lines 33-39) with a diameter of 1-200 nm (see column 2, lines 24-26). In the carbon nanotube formula, n is 1 to 100 (see column 1, line 55).

As to claim 20, 21, and 24, Lieber teaches the functional group of hydroxy (see column 4, line 8-9). Lieber '742 discloses a multi-walled carbon nanotube (see column 2, lines 33-39) with a diameter of 1-200 nm (see column 2, lines 24-26). In the carbon nanotube formula, n is 1 to 100 (see column 1, line 55).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca M. Stadler whose telephone number is 571-272-5956.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

rms


COLLEEN P. COOKE
PRIMARY EXAMINER